

WHAT IS CLAIMED IS:

1. A liquid electrophotographic toner composition comprising:
 - a) a liquid carrier having a Kauri-Butanol number less than 30; and
 - b) a plurality of toner particles dispersed in the liquid carrier,
wherein the toner particles comprise at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, and wherein one or more of the D material portions comprises one or more polymerizable, crystallizable compounds.
- 10 2. The liquid electrophotographic toner composition according to claim 1, further comprising at least one visual enhancement additive.
- 15 3. The liquid electrophotographic toner composition according to claim 2, wherein the at least one visual enhancement additive comprises at least one pigment.
- 20 4. The liquid electrophotographic toner composition according to claim 2, wherein the one or more polymerizable, crystallizable compounds comprise a crystallizing polymeric moiety derived from a polymerizable monomer selected from the group consisting of alkylacrylates where the alkyl chain contains more than 13 carbon atoms and alkylmethacrylates where the alkyl chain contains more than 17 carbon atoms.
- 25 5. The liquid electrophotographic toner composition according to claim 4, wherein the polymerizable monomer is selected from the group consisting of hexacontanyl (meth)acrylate, pentacosanyl (meth)acrylate, behenyl (meth)acrylate, octadecyl (meth)acrylate, hexadecyl acrylate, and tetradecyl acrylate.
- 30 6. The liquid electrophotographic toner composition according to claim 2, wherein the one or more polymerizable, crystallizable compounds are present in an amount of up to 30% by weight of the D material.

7. The liquid electrophotographic toner composition according to claim 2, wherein the liquid carrier comprises a hydrocarbon.
- 5 8. The liquid electrophotographic toner composition according to claim 2, wherein the liquid carrier comprises an aliphatic hydrocarbon.
9. The liquid electrophotographic toner composition according to claim 2, further comprising one or more charge control agents.
- 10 10. The liquid electrophotographic toner composition according to claim 2, wherein the weight ratio of D material to S material is in the range of 2:1 to 10:1.
- 15 11. The liquid electrophotographic toner composition according to claim 2, wherein the amphipathic copolymer has a graft structure comprising one or more D material portions grafted onto an S material portion.
12. A liquid electrophotographic toner composition comprising:
 - c) a liquid carrier having a Kauri-Butanol number less than 30; and
 - d) a plurality of toner particles dispersed in the liquid carrier,wherein the toner particles comprise:
 - (i) one or more polymerizable, crystallizable compounds, and
 - (ii) at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, and25 wherein the D material portion has a glass transition temperature calculated according to the Fox equation of greater than 55°C.
- 30 13. The liquid electrophotographic toner composition according to claim 12 wherein the one or more polymerizable, crystallizable compounds are located in the S portion of copolymer.

14. The liquid electrophotographic toner composition according to claim 12 wherein the one or more polymerizable, crystallizable compounds are located in the D portion of the copolymer.

5 15. The liquid electrophotographic toner composition according to claim 12 wherein the one or more polymerizable, crystallizable compounds are located in the D portion and the S portion of the copolymer.

16. A liquid electrophotographic toner composition comprising:

10 e) a liquid carrier having a Kauri-Butanol number less than 30; and
f) a plurality of toner particles dispersed in the liquid carrier,

wherein the toner particles incorporate:

15 (i) at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, and
(ii) one or more polymerizable, crystallizable compounds incorporated into the D material portion, or both the S material portion and the D material portion,

wherein the D material portion has a glass transition temperature calculated according to the Fox equation in the range of 30°C to 50°C.

20

17. A method of making a liquid electrographic toner composition comprising steps of:

25 a) providing an organosol comprising a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one amphipathic copolymer, wherein the amphipathic copolymer comprises one or more S material portions and one or more D material portions, and wherein one or more of the D material portions comprises one or more crystallizable, polymerizable compounds; and
b) mixing the organosol with one or more additives under conditions effective to form a dispersion.

30

18. The method according to claim 17, wherein the step of mixing the organosol with one or more additives comprises mixing the organosol with one or more visual enhancement additives.

5 19. The method according to claim 17, wherein the step of mixing the organosol with one or more visual enhancement additives comprises mixing the organosol with one or more pigments.

10 20. The method according to claim 17, wherein the step of mixing the organosol with one or more additives comprises mixing the organosol with at least one charge control agent.

15 21. The method according to claim 19, wherein the step of mixing the organosol with one or more additives comprises mixing the organosol with at least one charge control agent.

20 22. A method of making a liquid electrographic toner composition comprising steps of:

25 a) providing an organosol comprising a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, and wherein the D material portion has a glass transition temperature calculated according to the Fox equation of greater than 55°C, and wherein one or more polymerizable, crystallizable compounds is chemically incorporated into the S material portion, the D material portion, or both the S material portion and D material portion; and

30 b) mixing the organosol with one or more additives under conditions effective to form a dispersion.

23. A method of electrographically forming an image on a substrate surface comprising steps of:

- a) providing a liquid toner composition, the liquid toner composition comprising an organosol, wherein the organosol comprises a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, wherein one or more of the D material portions comprises one or more polymerizable, crystallizable compounds; and
- b) causing an image comprising the toner particles to be formed on the substrate surface.

10

24. The method according to claim 23 wherein the step of providing a liquid toner composition comprises providing a liquid toner composition comprising an organosol, wherein the organosol comprises a plurality of toner particles dispersed in a liquid carrier, wherein the binder particles comprise at least one visual enhancement additive and at least one amphipathic copolymer.

15

25. A method of electrophotographically forming an image on a substrate surface comprising steps of:

- a) providing a liquid toner composition, the liquid toner composition comprising an organosol, wherein the organosol comprises a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, wherein one or more of the D material portions comprises one or more polymerizable crystallizable compounds;
- b) causing an image comprising the toner composition to be formed on a charged surface; and,
- c) transferring the image from the charged surface to the substrate surface.

20

25

30

26. The method according to claim 25, wherein the step of providing a liquid toner composition comprises providing a liquid toner composition comprising an organosol, wherein the organosol comprises a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one visual enhancement additive and at least one amphipathic copolymer.

5

27. A method of electrophotographically forming an image on a substrate surface comprising steps of:

10 a) providing a liquid toner composition comprising a plurality of toner particles dispersed in the liquid carrier, wherein the toner particles comprise at least one amphipathic copolymer comprising one or more S material portions and one or more D material portions, and wherein the D material portion has a glass transition temperature calculated according to the Fox equation of greater than 55°C, and wherein one or more polymerizable, crystallizable compounds is chemically incorporated into the S material portion, the D material portion, or both the S material portion and D material portion; and

15 b) causing an image comprising the toner composition to be formed on a charged photoreceptor surface; and, without film-forming the toner composition,

20 c) transferring the image from the charged photoreceptor surface to the substrate surface.

28. The method according to claim 27 wherein the step of providing a liquid toner composition comprises providing a liquid toner composition comprising an organosol, wherein the organosol comprises a plurality of toner particles dispersed in a liquid carrier, wherein the toner particles comprise at least one visual enhancement additive and at least one amphipathic copolymer.

25

29. The method according to claim 27, wherein an electrostatic potential is applied to the toner composition effect transfer from the charged photoreceptor surface to the substrate surface.